

# BMPs for Effective Control of Forest Road Stormwater and Sediments

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**Issue:** Controlling and mitigating sediments transported from the forest road prism has become a major emphasis on both industry and federal forestland holdings. In recent years, application of forest road BMPs to protect water quality has become a common practice in forest activities in the US in response to the CWA. BMPs have the potential to reduce environmental impacts associated with forest operations, but it is a challenge to quantify the effect of a single BMP on a watershed without the required science. Implementation of effective BMPs first requires scientific information on the benefit of the practice toward the desired objective. Information on the effect



of BMPs on water quality and soil erosion is required to make informed assessments on the adequacy of current Forestry BMPs. Controlling sediment export from the forest road prism and its eventual delivery to forest streams will likely require alternative BMPs to reduce the risk of degrading environmental impacts. Sediment control systems minimizing sediment travel distances downslope are likely the key to reducing the environmental impact of road systems. Alternative sediment control systems need to be developed and evaluated to reduce impacts of existing road systems.

**Study Description:** The study will be conducted on roads on the Tallulah District of the Chattahoochee National Forest in Georgia. The study will evaluate the effectiveness of three sediment control treatments (BMPs): sediment basin, sediment basin with riser and hay bale barriers in reducing sediment and runoff export onto the forest floor. The experimental design will be a randomized complete block design. The study will be conducted on a mountain road on the National Forest of Georgia. Water quality and quantity will be monitored by water level recorders and storm water samplers located at the inlet and outlets of each turn-out ditch. Treatments will be evaluated on the basis of trapping efficiency and runoff reductions.

**Status:** The monitoring devices were installed immediately following road re-construction to incorporate proper drainage features (in September 2003).

## Benefits:

- *Alternative forest road sediment control systems effect on soil erosion, road runoff, and sediment export will be evaluated and quantified to improve current forest road BMPs*
- *Trapping efficiency of treatments will be assessed to identify which technique is most effective in controlling transport of detached sediment onto the forest floor and into stream systems*
- *Costs of associated treatments will be calculated and presented as an additional means for comparisons.*

**Cooperators:** National Forests of Georgia.

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